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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/808,395 | 03/25/2004 | Mutsumi Yano | 50024-028 | 5556 |

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McDERMOTT, WILL & EMERY
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EXAMINER

THOMAS, ERIC W

ART UNIT PAPER NUMBER

2831

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,395

Applicant(s)

YANO ET AL.

Examiner

Eric W. Thomas

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 10 is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 6 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/21/05 has been entered.

INTRODUCTION

The examiner acknowledges, as recommended in the MPEP, the applicant's submission of the amendment dated 6/21/05. At this point, claim 1 has been amended; claims 3, 8-9, 15-16 have been cancelled; and claims 11-14 are withdrawn. Thus claims 1-2, 4-7, 10 are pending in the instant application.

2. The indicated allowability of claim 5-6 is withdrawn in view of the newly discovered reference(s) to Naito et al. (US 6,529,367). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Naito et al. (US 6,529,367).

Naito et al. disclose a substrate (niobium sintered body) composed of a porous sinter of niobium particles (col. 4 lines 64-67, col. 5 lines 1-17); a nitride layer formed on the surface of and in direct contact with said niobium particles (col. 4 lines 64-67, col. 5 lines 1-17 – the surface of the Nb compact is nitrided in a nitrogen atmosphere at temperatures between room temperature and 2000 degrees C), a dielectric layer composed of niobium oxide is formed on the surface of the niobium nitride layer, wherein said dielectric is nitrogen-free (see abstract).

Regarding claim 2, Naito et al. disclose the substrate and said niobium nitride layer constitute an anode.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al. (US 6,529,367).

Naito et al. disclose the nitrogen content based on the total weight of the substrate and said niobium nitride is in the range of 10 ppm to 200,000 ppm (*0.001 to 20 wt % -- preferably 100 ppm to 10,000 ppm *0.001 to 1 wt %).

Naito et al. disclose the claimed invention except for nitrogen content based on the total weight of the substrate, niobium nitride and the dielectric layer is not less than 0.001 % by weight nor more than 0.2 % by weight.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the capacitor of Naito et al. having nitrogen content based on the total weight of the substrate, niobium nitride and the dielectric layer is not less than 0.001 % by weight nor more than 0.2 % by weight, where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 6, Naito et al. disclose the nitrogen content based on the total weight of the substrate and said niobium nitride is in the range of 10 ppm to 200,000 ppm (*0.001 to 20 wt % -- preferably 100 ppm to 10,000 ppm *0.001 to 1 wt %).

Naito et al. disclose the claimed invention except for nitrogen content based on the total weight of the substrate, niobium nitride and the dielectric layer is not less than 0.001 % by weight nor more than 0.08 % by weight.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the capacitor of Naito et al. having nitrogen content based on the total weight of the substrate, niobium nitride and the dielectric layer is not less than 0.001 % by weight nor more than 0.08 % by weight, where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

8. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

9. Claims 7 and 10 are allowed.

10. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest (taken in combination with the other claimed features) a capacitor wherein the niobium nitride layer is substantially composed of Nb₂N (claim 4).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W. Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ewt

 7/28/07
ERIC W. THOMAS
PRIMARY EXAMINER